Remarks

Claims 14-18 and 20 are pending after the cancellation of claims 19 and 21. Claims 22-32 are added with support as follows. Claim 14 is amended to delete reference to β PDGFR with support throughout the application, and to clarify that the antecedent of "or fragments thereof" is "antibody" with support as indicated in the Office Action. Claims 15 and 16 are amended to clarify that the agonist and antagonist are of α PDGFR activity. Claim 20 is amended to delete "a protein having the amino acid sequence of" as supported in claim 8 as filed. New claims 22 and 23 correspond to claims 17 and 18, respectively with support in the numerous comparisons of the various isoforms of PDGF. New claim 24 is supported in the specification where type-specific antibodies are described, e.g., the Abstract, claims 8 and 10 as filed, and paragraph 26 of the published application. Support for new claim 25 is found in paragraph 23 of the specification and in claim 14 as filed. Support for new claims 26 and 27 is found in as-filed claims 15 and 16, respectively. Support for claims 28 and 29 is essentially the same as for claims 22 and 23. New claim 30 is supported in the specification where type-specific antibodies are described, e.g., the Abstract, claims 8 and 10 as filed, and paragraph 26 of the published application. New claim 31 is supported in the Abstract and paragraphs 2, 14, 56, 123 of the publication. Support for new claim 32 is found in paragraphs 110, 134 of the published application. The title is amended to more clearly reflect the claimed invention with support throughout the specification. The abstract is amended to more clearly reflect the claimed invention with support in the background and throughout the specification.

Claim Rejections - 35 USC § 112, first paragraph

New Matter/Written Description

Claim 14

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. The Office Action asserts that the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection is based on the interpretation of claim 14 as reciting fragments of α PDGFR or β PDGFR. The Examiner notes that "fragment" was originally recited referring to "antibody," not referring to either a PDGFR or a PDGFR (See claim 14).

Regarding the phrase "or fragment thereof," applicants have amended claim14 in a way that makes it clear that this phrase modifies the term "antibody" in the claims. Thus, this rejection is believed to be overcome and its withdrawal is respectfully requested.

Claim 20 and 21

Claims 20-21 are rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. The Office Action states that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, the Office Action states that the wording

"having" denotes an open language, e.g. comprising, which could be interpreted the antibody or fragment thereof is specific for a protein that not only contains α PDGFR or , β PDGFR, but also *other* amino acids (emphasis added). Claim 21 is cancelled, thus mooting this rejection as to that claim.

Claim 20 is amended to delete the phrase "a protein having the amino acid sequence of." Thus, this rejection is believed to be overcome and its withdrawal is respectfully requested.

Enablement

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. The Office Action states that the claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is based on the interpretation of claim 14 as reciting fragments of α PDGFR or β PDGFR. The Examiner asserts that the instant specification has not provided a precise disclosure of the fragments of PDGFR recited in claim 14.

Regarding the rejection of claim 14 as lacking enablement due to the recitation of "fragments" this language has been amended as noted above and is believed to address this ground for rejection as well.

Claim Rejections - 35 USC § 112, second paragraph

Claim 14-21 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that with respect to claim 14, step (a)(i), line 1, "an antibody which specifically binds α PDGFR or β PDGFR or a fragment thereof" is vague and indefinite. It is not clear what "fragment thereof" modifies, whether this fragment refers to either the antibody or the PDGFR receptor.

The Office Action states that with respect to claim 15, it is not clear what "agonist" applicant refers to, e.g. to the antibody or PDGF receptor (alpha or beta).

The Office Action states that with respect to claim 16, it is not clear what "antagonist" applicant refers to, e.g. to antibody or PDGF xeceptor (alpha or beta).

Regarding the rejection of claim 14 as unclear due to the recitation of "fragments" this language has been amended as noted above and is believed to address this ground for rejection as well.

Regarding the rejection of claim 15 as unclear due to the recitation of "agonist," applicants have amended the claim to recite "an agonist of α PDGFR activity," thus making it clear what this

term refers to. Thus, this rejection is believed to be overcome and its withdrawal is respectfully requested.

Regarding the rejection of claim 16 as unclear due to the recitation of "antagonist," applicants have amended the claim to recite "an antagonist of α PDGFR activity," thus making it clear what this term refers to. Thus, this rejection is believed to be overcome and its withdrawal is respectfully requested.

Claim Rejections - 35 USC § 102

Claims 14-19, and 21 are rejected under 35 U.S.C. 102(a) as allegedly being anticipated by Heldin et al. (applicant submitted on 3/1/2004, page 10, reference B7, EMBO 1988 Vol. 7, page 1387). In this regard the Office Action states the following:

> Heldin et al. teach a method of evaluating binding of different dimeric forms of PDGF, e.g. PDGF-AA, AB or BB, to human fibroblast having PDGFR receptors. Heldin et al. teach evaluating the binding affinity of the different dimers (test compounds) by contacting the fibroblast cells (containing PDGFR receptors) with test compounds, i.e. PDGF-AA, AB, or BB dimers with an antibody which recognizes the 0 PDGFR on the fibroblast cells, and measuring the binding affinity with respect to each test PDGF dimers where the binding to the antibody is inversely proportional to the addition of each test dimers (See Figure 5).
>
> With respect to claim 15-16, the results of the binding analysis indicate that PDGF dimers (AA, BB or AB) behave differently with respect to mitogenic effect as agonist and antagonist, respectively (See Figure 6).
>
> With respect to claim 17-19, Heldin et al. use PDGF-AA, BB and AB isomers as the test compounds for the binding affinity analysis (See Methods and Materials and Figure 5-6).

With respect to claim 21, the antibody used in Heldin et al. study recognizing β PDGF receptor (See Abstract, and Method).

As the Office Action states, the antibody used by Heldin et al. recognizes only β PDGFR. At the time the present application was filed, α PDGFR had not been cloned. Therefore, a distinction between α PDGFR and β PDGFR could not be made due to their very high degree of sequence similarity. The amended claims do not recite any PDGFR other than α PDGFR. Thus, the claims as amended are not anticipated by Heldin et al. In fact, applicants note that claim 20 was not subject to this rejection. For the same reasons as with claim 20, new claims 22-32 are not subject to this rejection, and amended claims 14-18 have overcome this ground for rejection. Withdrawal of this rejection is believed to be merited and is respectfully requested.

Favorable consideration of the claims and allowance of the application are earnestly solicited. The Examiner is invited to directly contact the undersigned to discuss any issues relating to the present application.

A Credit Card Payment Form PTO-2038 authorizing payment in the amount of $450.00 for a two-month Extension of Time is enclosed. This amount is believed to be correct; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence, including any items indicated as attached or included, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Gwendolyn D. Spratt — Date: 8-28-06

APPENDIX A

The identification and cloning of alpha platelet-derived growth factor receptor (α PDGFR) is disclosed. Alpha PDGFR is a membrane-spanning cell receptor exhibiting tyrosine kinase activity. More particularly, various methods for identifying antagonists and agonists of α PDGFR are claimed.